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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,684	12/12/2003	Steven D. Theiss	58355USC02	1215

32692 7590 10/17/2005

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

DEO, DUY VU NGUYEN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,684

Applicant(s)

THEISS, STEVEN D.

Examiner

DuyVu n. Deo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/6/04, 7/18/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 3, 5, 6, 8, 9, 12 are rejected under 35 U.S.C. 102(a) as being anticipated by Kim et al. (Fabrication and application of a full wafer size micro/nanostencil for multiple length-scale surface patterning).

Kim describes a method for patterning a film comprising: vapour depositing an Al resist layer onto a SiN disposed on a substrate through a shadow mask (claimed repositionable aperture mask) and dry etching (subtractive process) to remove the expose portion of the SiN film (pages 612, 613).

Referring to claim 9, the shadow mask (stencil) can be used many times (page 613).

Referring to claim 12, the substrate includes polymer-based electronic devices, microfluidics (page 609, 610), which would read on claimed flexible substrate.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim.

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Referring to claim 2, even though Kim doesn't describe removing the resist material; however, one skilled in the art would find it obvious to remove the resist material after the etching of the underlayer so that other layers can be deposited to form the structures such as NEMS/MEMS.

5. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim as applied to claims 6 and 12 above, and further in view of admitted prior art.

Referring to claims 7 and 13, patterning such films and using such flexible substrate are known to one skilled in the art as shown in pages 7 and 10 of the specification. One skilled in the art would find it obvious to pattern such films and flexible substrate depending on the structure being formed with a reasonable expectation of success.

6. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim as applied to claim 1 above, and further in view of Baude et al. (US 2003/0152691).

Referring to claims 10 and 11, Kim doesn't describe the aperture mask is a polymer aperture mask comprises of polyimide. Baude describes an aperture mask that comprises of polyimide (paragraph [0026]). One skilled in the art would find it obvious to modify Kim's aperture mask in light of Baude's polymer aperture mask because Baude teaches that polymer aperture mask would be sufficiently flexible such that it can be wound to form a roll without damage (paragraph [0026]).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim as applied to claim 3 above, and further in view of Kopp (US 4,056,414).

Referring to claim 4, Kim doesn't describe the resist material is a silicon dioxide. However, silicon dioxide is known to one skilled in the art as a mask or resist material for

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etching underlayer including SiN as shown here by Kopp (claim 7). Therefore, one skilled in the art would find it obvious to use other resist material such as silicon dioxide for the etching of the underlayer including SiN with a reasonable expectation of success.

Election/Restrictions

8. Applicant's election without traverse of claims 1-13 in the reply filed on 9/13/05 is acknowledged.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu N. Deo whose telephone number is 571-272-1462. The examiner can normally be reached on 6:00-2:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Primary Examiner
Duy-Vu N. Deo
10/11/05

